

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN RE APPLICATION OF : Miguel Angel Camacho-Lopez, et al.  
FOR : MOTION OF LIQUID CRYSTALLINE  
ELASTOMERS AND METHOD OF USE  
THEREOF  
SERIAL NO. : To Be Assigned  
FILED : Herewith  
EXAMINER : Unknown  
ART UNIT : Unknown  
ATTORNEY DOCKET NO. : KNST 2 00018

**INFORMATION DISCLOSURE STATEMENT**

Mail Stop – Patent Application - No Fee  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In accordance with 37 C.F.R. §§ 1.56, 1.97, 1.98 and MPEP § 609, applicants submit the following Disclosure Statement concerning art of which the applicants are aware. A copy of PTO-1449 is enclosed herewith.

This Information Disclosure Statement is not intended to constitute an admission that any patent, publication or other information referred to herein or submitted herewith is "prior art" for this invention unless specifically designated as such.

In accordance with 37 C.F.R. §1.97(g) and (h), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 C.F.R. §1.56(b) exists.

**EXPRESS MAIL CERTIFICATE**

I hereby certify that this Information Disclosure Statement, PTO-1449 and attached documents are being deposited with the U. S. Postal Service "Express Mail Post Office to Addressee" service in an envelope addressed to Mail Stop Patent Application Fee, Commissioner for Patents, P.O. Box 1450, Alexandria, VA. 22313-1450. **Express Mail**  
Label No. **EV341154375US**

  
Cathryn Terchek

Date December 10 2003

In accordance with the United States Patent and Trademark Office OG Notice dated 05 August 2003, waiving the requirement under 37 CFR 1.98(a)(2)(i), for submitting a copy of each cited U.S. patent and each U.S. patent application publication for all U.S. national patent applications filed after June 30, 2003, Applicant has not enclosed copies of the cited U.S. patents and published applications with this Disclosure.

Under § 1.98(a)(3), no concise explanation of relevance is required for information that is in the English language. Accordingly, the cited patents require no further explanation (or no translation is available).

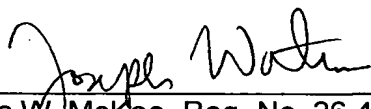
Under § 1.97(b)(1), this information disclosure statement is being filed within three months of the filing date of the application. Although it is believed no fee is necessary, any deficiency in fees should be charged to Deposit Account No. 06-0308.

It is respectfully requested that the attached documents be considered and officially cited in examination of this application.

Respectfully submitted,

FAY, SHARPE, FAGAN,  
MINNICH & McKEE, LLP

Date: Dec 10, 2003

  
James W. McKee, Reg. No. 26,482  
Joseph E. Waters, Reg. No. 50,427  
1100 Superior Avenue, Seventh Floor  
Cleveland, Ohio 44114-2518  
(216) 861-5582

Substitute for form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT(S)</b>	<b>Complete if Known</b>	
	Application Number	To be Assigned
	Filing Date	Herewith
	First Named Inventor	Miguel Angel Camacho-Lopez
	Art Unit	Unknown
Examiner Name	Unknown	
Sheet 1 of 2	Attorney Docket No.	KNST 2 00018

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.	Document No. Number-Kind Code (if known)	Issue Date Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Classification
	AA	4,293,435	October 6, 1981	Portugall et al.	
	AB	4,358,391	November 9, 1982	Finkelmann et al.	
	AC	4,388,453	June 14, 1983	Finkelmann et al.	
	AD	5,151,481	September 29, 1992	Finkelmann et al.	
	AE	5,164,111	November 17, 1992	Dorsch et al.	
	AF	5,190,689	March 2, 1993	Finkelmann et al.	
	AG	5,350,966	September 27, 1994	Culp	
	AH	5,385,690	January 31, 1995	Finkelmann et al.	
	AI	5,735,607	April 7, 1998	Shahinpoor et al.	
	AJ	5,900,405	May 4, 1999	Urry	
	AK	6,060,159	May 9, 2000	Delgado et al.	
	AL	6,065,572	May 23, 2000	Schober et al.	
	AM	6,143,138	November 7, 2000	Becker	
	AN	6,312,770 B1	November 6, 2001	Sage et al.	
	AO	US2001/0032663 A1	October 25, 2001	Pelrine et al.	
	AP	US2002/050769 A1	May 2, 2002	Pelrine et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.	Foreign Patent Document Country Code-Number Kind Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited document	Classification	T
	AQ					<input type="checkbox"/>

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T
	AR	P.I.C. TEIXEIRA, M. WARNER, "Dynamics of soft and semisoft nematic elastomers", The American Physical Society, July 1999, Volume 60, Number 1, pgs. 603-609.	<input type="checkbox"/>
	AP	TEMMEN, H., PLEINER, H., LIU, M., BRAND, H., "Convective Nonlinearity in Non-Newtonian Fluids", <u>Physical Review Letters</u> , The American Physical Society, 10 April 2000, Volume 84, Number 15, pgs. 3228-3231.	
	AQ	FINKELMANN, H., NISHIKAWA, E., "A New Opto-Mechanical Effect in Solids", <u>Physical Review Letters</u> , The American Physical Society, 2 July 2001, Volume 87, Number 1, pgs 15501-1-15504-4	

Examiner:	Date Considered:
* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if in conformance and not considered. Include copy of this form with next communication to applicant.	

Substitute for form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT(S)</b>	<b>Complete if Known</b>	
	Application Number	To be Assigned
	Filing Date	Herewith
	First Named Inventor	Miguel Angel Camacho-Lopez
	Art Unit	Unknown
	Examiner Name	Unknown
Sheet 2 of 2	Attorney Docket No.	KNST 2 00018

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.	Document No. Number-Kind Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	BA				
	BB				
	BC				
	BD				
	BE				
	BF				
	BG				
	BH				
	BI				
	BJ				

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.	Foreign Patent Document Country Code-Number Kind Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
	BK					<input type="checkbox"/>
	BL					<input type="checkbox"/>

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T
	BM	JAMIESON, V., Materials Science "Crystal Swims like a fish to escape from laser light", NewScientist, 22 March 2003, pg. 18.	<input type="checkbox"/>
	BN	M. CAMACHO-LOPEZ, H. FINKELMANN, M. SHELLEY, P. PALFFY-MUHORAY, "Swimming towards the dark: A photophobic light-driven elastomeric swimmer", The First World Congress on Biomimetics & Artificial Muscles, December 10, 2002; <a href="http://www.world-congress.net/">http://www.world-congress.net/</a> Session P18 – Polymer Gels Oral Session March 5, 2003	<input type="checkbox"/>

Examiner:	Date Considered:
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if in conformance and not considered. Include copy of this form with next communication to applicant.	